CASE OF COMMUNICATION

BETWEEN THE

STOMACH AND EXTERNAL SURFACE OF ABDOMEN.

BY

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[FROM THE MONTHLY JOURNAL OF MEDICAL SCIENCE, JANUARY 1851.]

ISABELLA DAVIDSON, an unmarried woman, thirty-six years of age, was admitted to Ward 13 of the Royal Infirmary, on the 11th November 1850. She gave the following history of her case:—She has resided all her life in the parish of Roxburgh, near Kelso, and has been accustomed to labour in the fields. Up to the age of fourteen, her health was remarkably good; about this period, however, she became subject to occasional darting pains in the left side of the epigastrium, and under the cartilages of the lower left ribs. These pains were not increased by pressure,—they continued to recur at intervals for seven years, and were accompanied with no signs of dyspepsia, except costiveness, eructations, and flatulent distension of the abdomen. Her food usually consisted of different preparations of oatmeal, of potatoes, milk, and occasionally of soup and boiled vegetables. Since she attained the age of fifteen, she has menstruated regularly. At the age of twenty-two, she gave birth to a child, after an easy labour. When twenty-five years of age, she recollects to have observed a soft elastic tumour (probably flatulent) between Poupart's ligament and the short ribs of the left side; it frequently shifted its place, and finally disappeared, when she was twenty-six years old, after an attack of diarrhœa, which lasted for six months. Up to this period she was always stout, and able for work; the diarrhœa did not prevent her from following her usual occupations, and her appetite continued good.

In 1842 she first observed a tumour in the left side of the epigastrium, not exceeding a pea in size. It was hard, painful, tender, but not discoloured; it increased steadily for two years, when it had attained the bulk of a very large orange. It then began to subside, and in about three months had completely disappeared. Pain and tenderness were still felt in its former situation for about another month (September 1844), when a dark spot, of the size of a half-crown, made its appearance in the epigastrium. At this period, the patient's general health first began to suffer; although able

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to shear at the harvest of 1844, and to engage in hard field labour, her strength and flesh became rapidly reduced. Her appetite still continued unimpaired.

On the night of October 22, 1844, while she was washing some clothes, she felt the black spot give way, and fluid trickle over the abdomen. She immediately stripped, found that a little blood and *matter* (?) had been discharged, and that the contents of her stomach were escaping by a rent in the black spot formerly noticed. She swallowed successively draughts of water and of milk, which gushed out in full stream from this orifice. She was seen next day by Dr Francis Douglas, then of Kelso, now of the H.E.I.C.'s service. His interference was limited to simple dressing of the sore, and the application of a bandage, to prevent the escape of the food. The patient states that when the dressings were removed, a sort of valve (mucous membrane?) could be seen closing the orifice, at a short distance from the surface of the abdomen. By the end of January 1845, the aperture had completely cicatrised. It continued closed for about a year, during which time the patient was able to move about, and engage in ordinary domestic occupations. She, however, continued to feel pain about the seat of the cicatrix, and was unable to work in the fields. Early in 1846 the cicatrix became red, small blebs made their appearance on its surface, and were succeeded by ulceration and re-establishment of the communication with the stomach. About the end of March 1846, the fistula again cicatrised; but in June 1847 ulceration occurred for the third time, and the communication with the stomach has existed ever since. For the last three years she has lain almost constantly in bed, and has worn a piece of linen, secured with a pad and bandage, over the external orifice of the fistula. She has been seen at intervals by Mr Stewart and Dr Hamilton, of Kelso, but has used no medicine except purgative pills, which she takes frequently, and laudanum, which has been given now and then, in small dose, to allay painful sensations. Her usual diet has of late consisted of coffee, bread, steak,—of many plain and nutritious articles of food, eaten frequently, and in small quantity, without much salt or other seasoning. She prefers her food warm, and drinks very sparingly. She says she is apt to shiver when anything cold is swallowed; and distension of the stomach, more especially with fluids, causes irritation about the external opening. She is of healthy family, and quite unaware of hereditary predisposition to any disease.

These particulars, gathered by interrogating the patient herself, were confirmed by the statement of her sister, who accompanied her to the hospital.

Her condition, on admission, was as follows:—She is dark-haired, and of a ruddy, healthy complexion. There is no appearance of hectic, cachexia, or even of discomfort. She is rather thin, but has lost little of her muscular strength. Temperature of the surface of the body natural, but easily lowered by exposure to cold. Pulse 70,

natural. Respiration slow, and unembarrassed. Tongue clean, with a few slight transverse fissures. Appetite good. Food taken in small quantity at a time. No thirst complained of. During the process of digestion, there is always more or less pain in the region of the stomach, and around the external orifice of the perforation. The bowels are habitually confined, and seldom act without the use of laxatives. The urine is secreted in small quantity; its density exceeds 1030; it is not coagulated by heat, nor on the addition of nitric acid. Menstruation continues regular. The patient occupies herself chiefly with reading and sewing. She is of cheerful disposition, and, for her station, remarkably intelligent. She sleeps well.

The external perforation is situated about two and a-half inches from the median line, and three and a-half from the umbilicus, close to the cartilage of the eighth left rib. It is of an oval form, and will admit an ordinary sized thumb. Its margin is rounded, depressed, hard, and red, presenting here and there minute points of ulceration. The surrounding integuments are, for the space of two inches around, red and indurated,—in a few points, ulcerated or excoriated. This appearance has been caused by the irritation of the parts during the patient's recent journey from Kelso. On passing the little finger deeply into the orifice, it meets with resistance when turned downwards and to the left side; in the direction of the pylorus it passes freely. The mucous membrane of the posterior wall of the stomach can be seen when the patient is placed in a favourable light, and when she takes a mouthful of milk it can be observed to flow over the surface opposite the external orifice.

The great similarity between the condition of my patient and that of Alexis St Martin, the subject of Dr Beaumont's interesting observations, suggested the propriety of repeating some of his experiments, and of instituting others which modern researches on the physiology of digestion render desirable. I accordingly brought the case under the notice of the Edinburgh Medico-Chirurgical Society, and with the assistance of a committee, appointed at their November meeting,[1] hope to have the opportunity of making such a series of observations as may seem compatible with the welfare of the patient, and which may at some future period be communicated to the profession. But as experiments on digestion can only be satisfactory if performed on a healthy subject, I have hitherto contented myself with regulating the action of the bowels by enemata and the use of proper diet, and with applying such mechanical contrivances as seem best adapted to promote healthy cicatrisation, and to reduce the irritation of the integuments by restraining the escape of the contents of the stomach from the preternatural orifice. In this I have partially succeeded, by laying a piece of vulcanised caoutchouc over the hole, and securing over all a pad and broad bandage. The

[1] The committee consists of Mr Syme, Mr Goodsir, Dr Christison, Dr Bennett, Dr Douglas Maclagan, and Dr W. Robertson.

dressing requires to be occasionally shifted, to permit the escape of flatus, which often accumulates to a troublesome extent. The contents of the stomach have been frequently roughly examined about mid-day: they are always highly acid, and contain particles of flour, coagulated albumen, milk, and other articles, derived from the patient's usual breakfast of coffee, milk, bread, and egg, taken about 9 A.M.

On the 4th December I probed the cavity with an elastic catheter, and from the examination then made I am induced to believe that the perforation communicates with the stomach through its anterior wall, not far from the great curvature, and probably about four inches from the cardia. Although introduced with great caution, the bougie caused (as in Dr Beaumont's case) some little uneasiness or faintness.

About the same time my friend, Dr J. Smith, kindly made a coloured drawing of the external appearances, which are copied from it with sufficient accuracy in the accompanying lithograph. It will be seen that the external orifice has somewhat diminished in size since my first examination of the case,—that its upper margin includes the cartilage of the seventh rib,—and that the cartilages of the ninth and tenth ribs (indicated by figures 9 and 10) are situated beneath and external to it.

The precise nature of the lesion which induced the successive perforation of the stomach and abdominal parietes is rather obscure. The most probable conjecture which I can offer is, that a chronic ulcer of the stomach occasioned, whether by perforation or otherwise, extension of inflammation to a limited portion of its external surface, and consequent adhesion to the abdominal parietes,—that thereafter an abscess formed external to the stomach, and discharged its contents into the viscus,—that the contents of the stomach, acting upon the walls of the abscess, ultimately caused the ulceration of the integuments.

As to the prospect of cure, I fear the case does not admit of remedy,—certainly not of surgical interference at present. The edges of the aperture could not be thoroughly approximated without exposing or cutting away a portion of the cartilages of the seventh and eighth ribs, and although a flap of skin might easily be transplanted, so as to cover it, ulceration would almost inevitably occur, from distension from within, and from the action of the gastric juice and ingesta upon its internal surface. There would, moreover, be a risk of exciting fatal inflammation, to which I should not feel justified in subjecting the patient.

[By the 2d January the fistula had contracted to little more than half its original size, and the irritation of the integuments had subsided. The patient was permitted to return home, as she thought her general health was impaired by prolonged exposure to the air of the hospital.]

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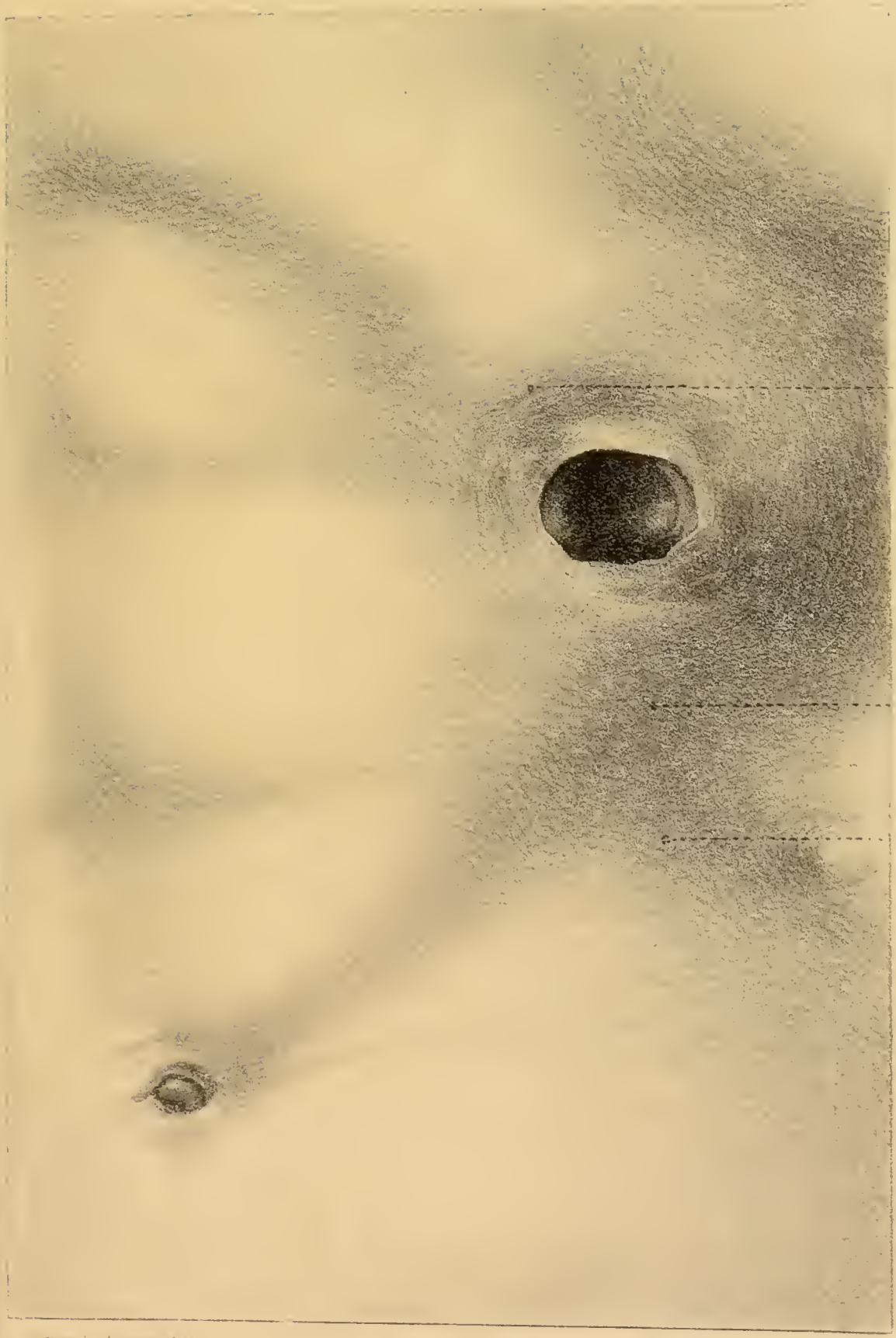

J. Bellady Lithog. Edinr